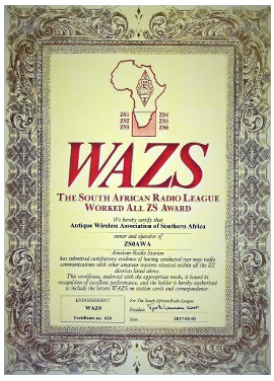
Newsletter
The Antique Wireless Association of Southern Africa
18th Anniversary

183 October 2021



Inside this issue:

AWA Committee:

* President—Renato ZS6REN
* Acting VicePresident—John ZS1WJ
* Technical Advisor—Rad ZS6RAD
* Secretary/PRO—Andy ZS6ADY
* KZN—Don ZS5DR
* WC—John ZS1WJ
* Historian—Oliver ZS6OG

Visit our website:

www.awasa.org.za

Reflections:

The time has come, the Walrus said….

And so it is that the time has come for another AWA AGM and time to elect a new president and his helpers, to carry the banner for another two years.

It is hard to believe that we are 18 years down the road and have had a load of Presidents who have all had an important role to play in the growth and role of the AWA in the Amateur Fraternity.

A list of our esteemed fellows is as follows:

2003 – Cliff Smyth ZS6BOX Founding President
2004 – Bushy Roode ZS6YQ/ZS6M (SK)
2005 – Rod Radford ZS5RK (ZL1RK)
2006 – Andy Cairns ZS6ADY
2007 – Gary Potgieter ZS5NK (SK)
2008/9 – Rad Handfield-Jones ZS6RAD
2010/11 - Don Radford ZS5DR
2012/13 - Richard Dismore ZS6TF (F4WCD)
2014/15 - Ted Hart ZS6TED
2016/17 - Jacques Scholtz ZS6JPS
2018/19 - John Watson ZS1WJ
2020 - 21 Renato Bordin ZS6REN

Because we are such a unique organisation, our president can come from any part of the country, as can be seen in the diversity of call signs.

It was much easier when one could travel freely and cheaply, that our AGM's were well attended from all reaches of the country. Somehow we seemed to have missed Div 4 though.

In these times of restrictions it is still important that we reach out to as many members as possible and the possibilities are there for us to do this via electronic media today.

I am going to investigate this and see how we can make it possible to put the meeting on to a social media platform and allow as many as possible to join us.

We will let you know well beforehand if this becomes a possibility.

I was browsing through a pile of photo's that I have from the first Meetings held at Rand Airport all the way through to our most recent at SAIEE. Some very good and pleasant memories of some very good friends and fellow hams.

On the very last page of this Newsletter I have put together a collage, which reflects some of them.

I know we are asking a lot to get as many of you as possible to attend this year. But just think of all the fuel you have saved with the lockdowns and how you have been starved for good company with like-minded people. So this is a great opportunity for you to get out and meet (at 1,5m social distance) and rub elbows, (that you have sneezed in), or just stand at a distance and say "hello".

We look forward to seeing as many of you as possible. Lets make this one to remember. If you are sick and have a temperature, please stay at home and get well.

Best 73

DE Andy ZS6ADY

Wikipedia

Sunspots:

Any given appearance of a sunspot may last anywhere from a few days to a few months, though groups of sunspots and their active regions tend to last weeks or months, but all do eventually decay and disappear. Sunspots expand and contract as they move across the surface of the Sun, with diameters ranging from 16 km (10 mi) to 160,000 km (100,000 mi).

Although the details of sunspot generation are still a matter of research, it appears that sunspots are the visible counterparts of magnetic flux tubes in the Sun's convective zone that get "wound up" by differential rotation. If the stress on the tubes reaches a certain limit, a loop of the tube may project through the photosphere, the Sun's visible surface. Convection is inhibited at the puncture points; the energy flux from the Sun's interior decreases, and with it, surface temperature, causing the surface area through which the magnetic field passes to look dark against the bright background of the photosphere.

The Wilson effect implies that sunspots are depressions on the Sun's surface. Observations using the Zeeman effect show that prototypical sunspots come in pairs with opposite magnetic polarity. From cycle to cycle, the polarities of leading and trailing (with respect to the solar rotation) sunspots change from north/south to south/north and back. Sunspots usually appear in groups.

A CW auto CQ'er

On my bench – Renato September 2021

I'm a keen fan on using modern components and techniques to enhance an older piece of equipment, digital frequency counters on vintage radio's, DDS oscillators to replace scarce crystals or even using a digital multimeter to fault find a prized boat anchor. Us humans also need a bit of modern help as the years go by, ask Cliff about his never ending hearing aid saga!

The ZS6TJ club recently hosted the sale of a bunch of radios and associated equipment and attracted a bunch of visitors including a group involved with CW training. As a non CW operator I was most impressed with the gear on display and the operating procedures patiently demonstrated by Richard and Michael. After a tour of the CW mobile station with all its gear, I noted that modern radios featured memories used to send common messages like CQ's. I wondered if this useful, and I'm sure desirable feature, could be incorporated on a vintage CW transmitter. Push a button and send a CQ DE ZS6REN K.

Turns out the internet is full of designs and examples for auto keyers or beacon message transmitters, some sort of easy, others complicated and some even featuring computer programs to generate the code in hex. Links to some of these websites available at the end. The common denominator for all the designs I saw feature the following building blocks.

Some sort of memory device, eprom, eeprom, non volatile ram, flash etc to store our message.
A way of addressing the memory device.
A clock source to set the message speed.
An interface to the CW input of the rig.

The heart of this type of project is of course the memory device itself, we need a way of storing the message without relying on power to retain the message. The only realistic choice here is an eprom, Fig1. These memory devices have a window to allow ultraviolet light to erase the memory so one can re-use the device after programming.

Flash memory with addressing and data in a parallel fashion are scarce and expensive and I did not want to add bits like Arduino's or micros to send our message. The eprom alone is more than adequate to send a message or two providing we have a way of addressing the device. The memory size is not important since a typical message might be "CQ CQ CQ DE ZS6REN ZS6REN K" This is less than 30 characters long including spaces, which translates into a message less than 300 bytes long, well within the capacity of even the smallest eprom available.

My choice of selecting the eprom address is a CD4040 counter and the clock generated by a 74HC14. I simply used these bits because they are in my parts inventory but a 555 timer could be used for the clock, 4020 or even 7490 BCD counter for addressing and so on, a dozen or so 12AX7's will also work. Eprom used is a 2732 4kbX8, again not important, we only using <300 of the possible >4000 bytes of memory!

Fig 1 Typical Eprom

The clock, which is a square wave, generated by the 74HC14 increments the 4040 counter in a binary manner from 0 to 4095 and able to access all the memory available on the eprom. Of the 8 bits available for data storage only 1 bit will be used to send our message.

So how does 1 bit of data send out our 30 character message you may ask?
Consider the following table. Can you see a pattern?

address	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 - address	
00000000	00 01 01 01 00 01 00 01 01 01 00 01 04 00 00 00	.....
00000016	00 01 01 01 00 01 01 01 00 01 00 01 01 01 04 00	.....
00000032	00 00 00 01 01 01 00 01 00 01 01 01 00 01 04 00	.....
00000048	00 00 00 01 01 01 00 01 01 01 00 01 00 01 01 01	.....
00000064	04 00 00 00 00 01 01 01 00 01 00 01 04 00 00 01	.....
00000080	04 00 00 00 00 01 01 01 00 01 01 01 00 01 00 01	.....
00000096	04 00 00 00 00 01 00 01 00 01 04 00 00 00 00 01	.....
00000112	01 01 00 01 00 01 00 01 00 01 04 00 00 00 00 01	.....
00000128	00 01 01 01 00 01 04 00 00 00 00 01 04 00 00 00	.....
00000144	00 01 01 01 00 01 04 00 00 00 00 01 01 01 00 01	.....
00000160	01 01 00 01 00 01 04 00 00 00 00 01 00 01 00 01	.....
00000176	04 00 00 00 00 01 01 01 00 01 00 01 00 01 00 01	.....
00000192	04 00 00 00 00 01 00 01 01 01 00 01 04 00 00 00	.....
00000208	00 01 04 00 00 00 00 01 01 01 00 01 04 00 00 00	.....
00000224	00 01 01 01 00 01 00 01 01 01 04 00 00 00 00 00	.....
00000240	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000256	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 02	.....
00000272	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000288	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000304	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000320	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000336	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000352	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000368	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....

Fig 2

address	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 - address	
00000000	00 01 01 01 00 01 00 01 01 01 00 01 04 00 00 00	.....
00000016	00 01 01 01 00 01 01 01 00 01 00 01 01 01 04 00	.....
00000032	00 00 00 01 01 01 00 01 00 01 01 01 00 01 04 00	.....
00000048	00 00 00 01 01 01 00 01 01 01 00 01 00 01 01 01	.....
00000064	04 00 00 00 00 01 01 01 00 01 00 01 04 00 00 01	.....
00000080	04 00 00 00 00 01 01 01 00 01 01 01 00 01 00 01	.....
00000096	04 00 00 00 00 01 00 01 00 01 04 00 00 00 00 01	.....
00000112	01 01 00 01 00 01 00 01 00 01 04 00 00 00 00 01	.....
00000128	00 01 01 01 00 01 04 00 00 00 00 01 04 00 00 00	.....
00000144	00 01 01 01 00 01 04 00 00 00 00 01 01 01 00 01	.....
00000160	01 01 00 01 00 01 04 00 00 00 00 01 00 01 00 01	.....
00000176	04 00 00 00 00 01 01 01 00 01 00 01 00 01 00 01	.....
00000192	04 00 00 00 00 01 00 01 01 01 00 01 04 00 00 00	.....
00000208	00 01 04 00 00 00 00 01 01 01 00 01 04 00 00 00	.....
00000224	00 01 01 01 00 01 00 01 01 01 04 00 00 00 00 00	.....
00000240	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000256	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 02	.....
00000272	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000288	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000304	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000320	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000336	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000352	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....
00000368	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	.....

Try this one with some of the characters highlighted…….

Fig 3

All you are looking at here is the data content of a memory location or address. The addresses are highlighted in yellow and arranged from left to right. The data is just a “1” or a “0” the “4” you see is not necessary and I simply added it after each character to make typing and error correcting a bit easier. So at each address incremented of the counter, a byte of data will appear on the data bus output of the eprom but we only use bit “0” to emulate our CW key. So the output looks like “00000000” or “00000001” Also the “2” at the end of the message resets the counter back to 0 by toggling bit “1” or 00000010. This is not critical and can be omitted.

The continuous toggling of the single data bit as the counter incrementally access’s each address is what will be used to key the transmitter. The dah composed of 3 dits, are close enough to key a dah and of course a single bit will key the transmitter with a dit.

As you can see I used the standard CW timing of 3 units for a “dah” and 1 unit for a “dit” with 5 units to separate characters. Here one can experiment a bit since the sound and feel of the CW message is dependant of the clock duty cycle. The speed of the message is of course dependant on the clock speed and can be adjusted by Vr1

Without using my cheat “4” and “2” trick it would be possible to store 8 different messages by selecting 1 of the 8 data outputs of the eprom but would take some time to type out and debug the listing. For now you only get one message. I used one of many free hex editors on the internet to type out my CQ message and saved the file with a .bin or binary extension. I used a commercial programmer to burn the eprom with the binary file and I must say that having a programmer/emulator did help with the development of this project. Since the data organisation and amount of data is very simple it would be possible to program an eprom manually. I have not tried this but I’m pretty sure a couple of dip switches on a breadboard with bench power supply could produce a capable programmer. But not to worry, you have me as the programming facility if you wish to build an AWA CW auto CQ’er.

The schematic shown in Fig4 uses a switch to power everything and send the message from the beginning. Although my message listing calls CQ twice, this can be interrupted with the power switch in series with a 9V battery. The complete circuit draws about 120mA so perhaps sourcing power from your shack 12V supply may be a better option. Transistor Tr1 is grounded with dit’s and dah’s and is wired in parallel with your transmitters CW key input. The completed Veroboard assembly (Fig 5) will fit into a small enclosure of your choice.

This prototype is available to the first chap that sends me a mail and could use such a device. Send me your call sign and I will program the eprom with your CQ message and post it off to you. All I ask in return is that you send Andy a short report on the use of the auto keyer, any notes or opinions or even suggestions to improve the auto CQ’er for Andy to include in the newsletter.

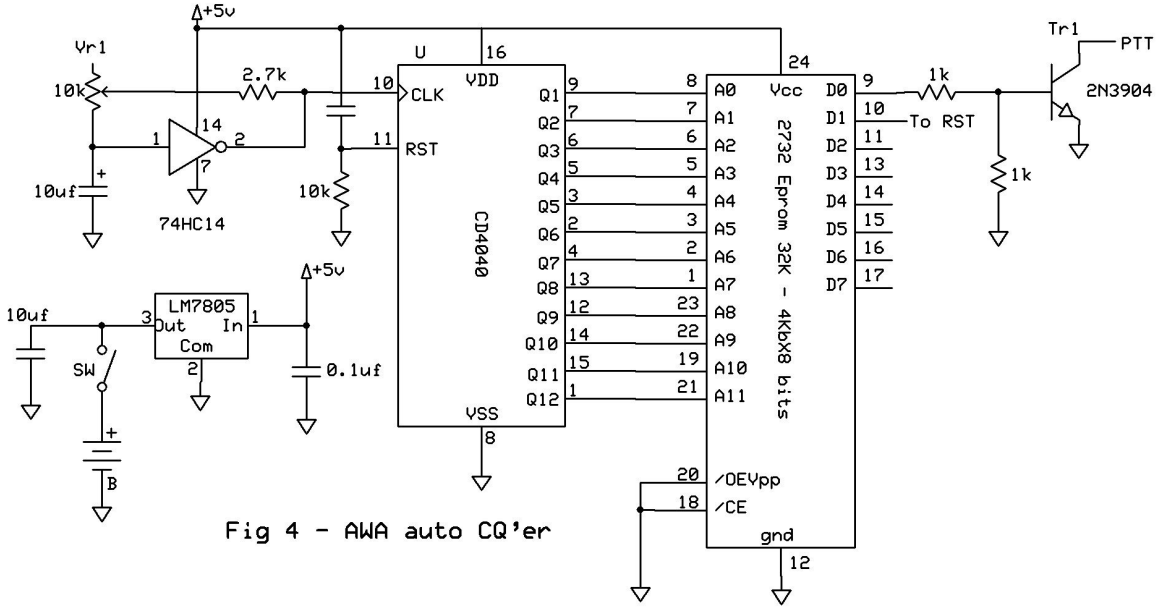


Fig 4 - AWA auto CQ'er

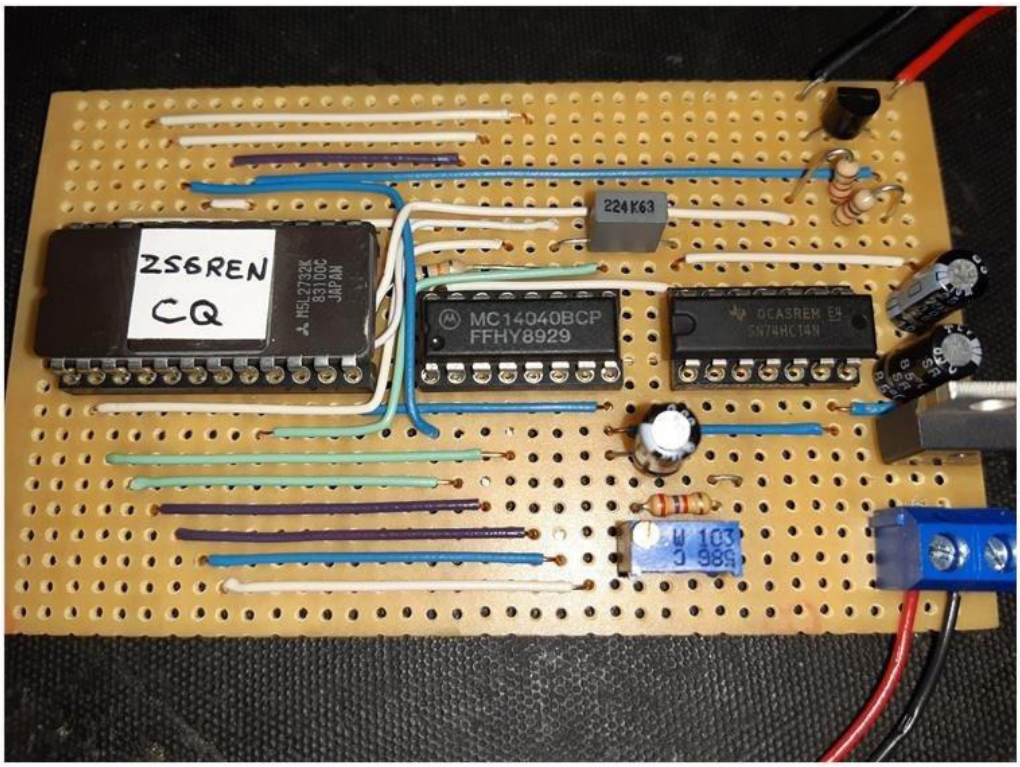


Fig 5 – Veroboard AWA CQ'er

I would appreciate comments from CW operators on possibly using an auto keyer on vintage transmitters, I would imagine this type of device many have advantages when participating in contests. Also please let me know if you wish to build one of these devices, I will gladly help with components and programmed eprom's. So……keep all those old boards with ic's that have stickers on them, they could help relax your wrist.

Web sites used for reference –
http://www.solorb.com/elect/hamcirc/beacon/index.html
https://www.radioexperimenter.us/re-02-1994/by-nick-ciarallo-vehot.html
The article featured in VHF-com 1993 provided the inspiration for my attempt at the CW auto keyer.
https://worldradiohistory.com/Archive-DX/VHF-Communications/VHF-COMM.1993.3.pdf

Radio Telegraph Apparatus by World's Champion

T. R. McELROY, 175 Congress St., Boston, Mass.

Exclusive European representative: C. Webb Ltd., 14 Soho St., London

"I've designed and built my semi-automatic and hand radio-telegraph keys in accordance with principles of balance and ease of operation that I've learned in 25 years as an active radio, cable and telegraph operator. Nearly anywhere in the world wherever dots and dashes are used, operators move more traffic with less effort with MAC brand keys."

DeLuxe

MAC KEY

$9.50

Carefully selected and tested springs partially take the place of wrist and fingers. Fast, rhythmical Morse with little effort. Heavy one piece casting with beautiful and permanent marble finish. ¼" adjustment screws. 3/16" contacts; bakelite insulation throughout. Pigtails, dot stabilizer, circuit closer, case hardened bearings.

STANDARD MODEL, $7.50. Same key but some design and finish economies to lower cost.

JUNIOR MODEL, $4.95. Same main lever. Stamped steel base.

DeLuxe

STREAM KEY

$2.25

The prettiest telegraph key I've ever seen! Heavy chrome plate, 3/16" contacts, superbly balanced main lever. My twenty-five years experience as an operator has gone into the design of the finest hand key human skill can build. Its action will positively delight any operator!

PROFESSIONAL, $1.80. All Brass
COMMERCIAL, $1.50. Chrome & Black
AMATEUR, $1.20. Cadmium & Black

These three keys on conventional type straight key base.

AC/DC AUDIO OSCILLATOR

$5.95

Molded bakelite case. Separate outputs for phones and modulation. Knob control tone selection. 600, 800, 1000 cycles. Complete with two 6C5G and one ballast tube. Ideal for operators and engineers.

OPERATOR'S PRACTICE SET

$2.95

Same prettily designed and balanced lever as all my keys. Mounted on heavy cast base. MAC HUMMER, mechanical oscillator 1000 cycles. Uses 6 volts or more. Apparatus that will remain prized long after the beginner's stage has been left behind.

"I've employed recent developments in the field of electronics to produce simply designed, ruggedly built, and low cost, completely automatic transmitting and receiving equipment. Trouble-free photo-electric cell circuit supplants intricate and costly mechanical principles. High speed ink recording direct from receiver output by application of newly discovered, economical means of signal rectification and positive pen action resultant from use of cast NIPERMAG magnets and special bobbins."

MAC AUTO

$29.75

Uses regulation inked slip. Light from exciter lamp onto photo-cell interrupted by inked dots and dashes. Amplified to give positive relay action. Key transmitter or local oscillator. Unequalled for training operators. Limitless supply tape available thru Recorder. Transmits perfectly up to 100 wpm.

MAC RECORDER

$29.75

Connects to output of communication receiver and records up to 100 wpm perfectly. Built-in transformer and rectifier. Complete in one unit. Merely throw switch to DC input and record your own sending. Anything recorded may be run through Mac Auto at any desired speed.

TAPE PULLER

$12.00

For either AUTO or RECORDER. Speeds from 5 wpm to 100 wpm.

PRACTICE REELS

$1.00

25 different reels of practice slip available. 2000 words per reel.

RARAE AVES : OLD VALVES AND OLD ENGLISH !

By Capt. L.G. Latski,ex Owner/Curator of the
Latsky Radio Museum at Van Rhynsdorp,Namaqualand

On thaem lande waes sum mann, Ludovic gehaten and he spraec :
"Her wason min Echofon gehande !"

Speaking of valves/tubes, can it be that the octal valve/tube dates from the mid 1930's ? Yes, already more than eighty years ago.

Every year that passes, makes valves even scarcer and more expensive, forcing one to try any means of prolonging valve life. Valves/tubes are today indeed rarae aves !

Take for example the AA5 set (All American Five) using the ubiquitous 12V octal tubes/valves :
12SA7,12SK7,12SQ7,50L6GT ,35Z5GT.

One can prolong their life by slightly underrunning their filaments in two ways : 1) replace the 35L6GT with a 50L6GT or 2) wire a Brimistor into the filament/heater line. The Brimistor has a cold resistance of several hundred ohms which, within a short space of time drops to about 7 ohms when hot.

This causes a gradual warm up of the valves, thus obviating a destructive surge which can fuse a filament in the series chain.

A five percent voltage reduction gives valve filaments/heaters a 200% longer life !

The above advice is applicable to any AC/DC set, also the popular Echophone EC1A of 1941 or the Hallicrafters S38 set of 1946.

The writer's two are still going strong at 80 and 74 years of age. Being an old timer, I listen to music at night on Radio 828/LM in the MW band ,if I cannot sleep here at Vanrhynsdorp in remote Namaqualand about 300km from the 20kW transmitter at Klipheuvel, and the signal is clear as a bell, being raked in by a 33 ft high longwire aerial of about 60 ft in length.

Mirabile dictu, but a metal 12SA7 mixer/converter tube/valve helps prevent drift as the metal shell keeps the valve at an even temperature.
Brimistors are truly valve/tube lifesavers !

"Her wesan min Ecofon and Hallicrafters gehande :"
Translation : here is my Echophone and Hallicrafters at hand.

Anglo-Saxon=Old English as spoken in England around 750 AD

FINIS

Antique Wireless Association Valve QSO Party

1. Aim
The aim of the AWA Valve QSO party is to create activity on the 40 and 80 metre bands. It is a phone only contest using AM and SSB. Preferably, valve radios or radios with valves in them may be used. No linear amplifiers may be used.

2. Date and Time
2.1 AM QSO Party
13:00 to 17:00 UTC (15:00 to 19:00 CAT) Saturday 2 October 2021
2.2 SSB QSO Party
13:00 to 17:00 UTC (15:00 to 19:00 CAT) Sunday 3 October 2021

3. Frequencies
3.1 40 metres: 7 063 to 7 100 kHz and 7 130 to 7 200 kHz; 80 metres: 3 603 to 3 650 kHz

4. Power
The output power may not exceed 100 w, unless the rig itself has a higher output power (FTDX400, etc.)

5. Exchange
5.1 Call sign, RS report, a consecutive serial numbers starting at 001 and the type of radio used, e.g., HT37 TX.
5.2 Each QSO claimed for competition credit must include contemporaneous direct initiation by the operator on both sides of the contact. Initiation of a contact may be locally or by remote. Contemporaneous = existing at or occurring in the same period of time and the operator must be in control of all the processes. In plain English – a live, air breathing radio amateur must be at both ends of the QSO.

6. Scoring (Your radio)
All valve radio: 3 points per contact Hybrid radio: 2 points per contact Solid State Radio: 1 point per contact

7. Log Sheets
7.1 The log sheets must be submitted by Friday 8 October 2021 to andyzs6ady@vodamail.co.za.
7.2 Log sheets should be in Excel Format as far as possible.
7.2 Certificates will be awarded to the first three places in each category – AM and SSB

All Valve

Hybrid

Solid State

Notice of the Antique Wireless Association of Southern Africa 2021 AGM

Notice is hereby given for the Annual General Meeting to be held on Saturday 13th November 2021.

The AGM will be held at the premises of the SAIEE in Observatory from 09h00.

The Museum will be opened for those wishing to browse and fleamarket tables will be available for those wishing to bring any excess items to dispose of.

The Meeting will commence at 10h00 in the main auditorium of the SAIEE and all Covid protocols will be observed.

Items for discussion:

1. Presidents report.
2. Membership Figures
3. Financial Report
4. Donations
5. Feedback on QSO parties
6. Nets
7. Museum
8. Geoff Wright SK Floating Trophy
9. Election of President and Office bearers for the next two years
10. Open Discussion

A bring and braai will be held after the meeting for those wishing to stay and socialise for a while.
Braai packs and cold drinks will be available for those who wish @R70 per braai pack, or bring your own.
(Please confirm with Andy ZS6ADY should you want braai packs - 0824484368)

Directions to the SAIEE are available on the AWA website www.awasa.org.za under “Museum”.

Attendees of the 2019 AGM

CONTACT US:

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Benoryn
1504

Mobile: 082 448 4368
Email: andyzs6ady@vodamail.co.za

Antique Wireless Association of Southern Africa

Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yesterdays radio's and associated equipment. To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association. Join by logging in to our website.

Get your backdated issues at
http://www.awasa.org.za/index.php/newsletters

Visit our Website:
www.awasa.org.za

Notices:

Net Times and Frequencies (SAST):
Saturday 07:00 (05:00 UTC) —Western Cape SSB Net— 3.640
Saturday 08:30 (06:30 UTC)— National SSB Net— 7.125; Sandton repeater 145.700
Echolink—ZS0AWA-L; ZS6STN-R
Relay on 10.133; 5.380 and 3.615
Saturday 14:00 (12:00 UTC)— CW Net—7025

AWASA Telegram group:

Should you want to get on the AWA Telegram group where a lot of technical discussion takes place, send a message to Andy ZS6ADY asking to be placed on the group. This is a no-Nonsense group, only for AWA business.
+27824484368

FOR DISPOSAL:

RAF WW II T1154 TX and Four R1155 RXs plus the Type J Antenna Switch.

The TX works (had it on the air years ago) and I have a set of unused valves for it. Also a home brew (not by me) medium voltage PSU. There is also a copy of the Air Publication AP 2548A and several other articles on the equipment.

Peter Smith ZS6FS 073-141-3326 or PANDJ@MWEB.CO.ZA, Centurion Tshwane

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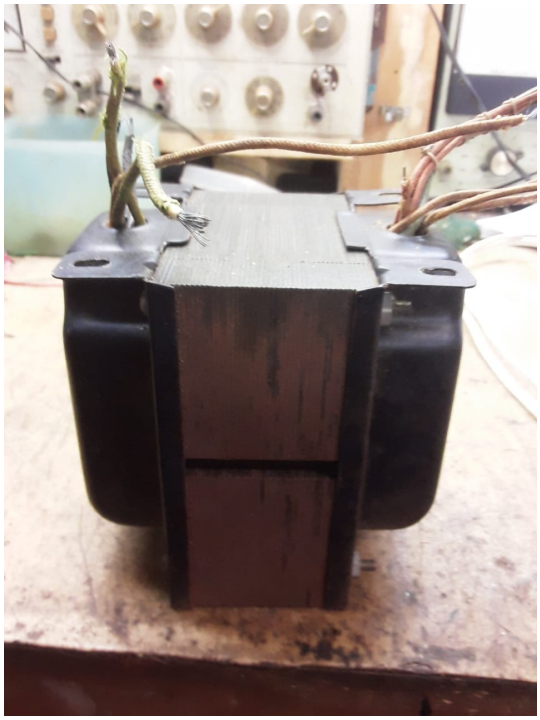


Johnson Viking Ranger power transformer.

Used, tested ok. 110v primary.

Thordarson multimatch modulation transformer

T11M76. 75 to 125w

Thordarson multimatch driver transformer T15D79 15w

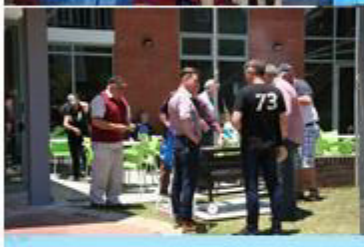
UTC CVM3 modulation transformer .pp807 to 6146.

R1155 DF meter, tested working

Open to any sensible offers. Contact John ZS5JX. Cell +27 82 486 5280. (Parts are in Durban)



Optoma

AWASA







SHACK OF THE
YEAR AWARD